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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,766	12/12/2001	Noriyuki Murao	M1989-14	8696

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EXAMINER

ESTRADA, ANGEL R

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,766

Applicant(s)

MURAO ET AL.

Examiner

Angel R. Estrada

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 11-13, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 4-6, 8-10, 14 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 4, 5a and 5b should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 60. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Double Patenting

3. Claims 6 and 10 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 8 and 5, respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Specification

4. The abstract of the disclosure is objected to because in line 12 "weld" should be -
--welded--. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 7, 11-13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicants' prior art (figures 4, 5a and 5b) in view of Opprecht et al (US 4,495,397).

Regarding claim 1, the applicants' prior art discloses a method for making a magnetron (see figures 4) wherein said magnetron comprises: an anode cylinder (51); a

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plurality of vanes (52) arranged radially within said anode cylinder (51); a magnetic piece (53) disposed at an open end section of said anode cylinder (51); an anode vacuum container (55), including a metal container (54) covering an upper surface of said magnetic piece (53); a cathode (57) disposed along a central axis of said vacuum container (55); and an antenna (58) externally discharging microwaves (see page 1 lines 11-16); said method having steps comprising: placing said magnetic piece (53) and said metal container (54), in that order, on a shelf (see figure 5a) formed inwardly on a thin end section projecting from said open end section of said anode cylinder (see figure 5a); and tightly welding said thin end section with said metal container (see figure 5b); but the applicants prior art lacks the step of forming a predetermined number of projections projecting inwardly from said thin end section of said anode cylinder, whereby said metal container is loosely secured; and tightly welding said thin end section with said metal container. Opprecht et al teach a method of joining two metals comprising the step forming a plurality of projections (11,12 or 18,19) projecting inwardly from a section of a first metal material (see figure 3 and 4) and tightly welded to a second material (see figure 3 and 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide to the applicants' prior art method of fabricating a magnetron with a step of forming a plurality of projections projecting inwardly from said thin end section of said anode cylinder, and tightly welding said thin end section with said metal container as taught by Opprecht et al to obtain a high quality connection between the cylinder and the metal container.

Regarding claim 2, the applicants' prior art discloses the method for making magnetrons (see figure 4), wherein an outer perimeter of said metal container (54) is bent inward to form an outer perimeter bend (see figure 5a), covering a substantial section of end portions of said magnetic piece (53 and see figure 5a).

Regarding claim 3, the modified applicants' prior art discloses the method for making magnetrons (see figure 4), wherein said predetermined number of projections (as taught by Opprecht et al) are formed after said metal piece and said metal container (54) have been installed by using a projection tool (as taught by Opprecht et al, see figure 3 and 4) disposed outside said thin end section of said anode cylinder.

Regarding claim 7, the modified applicants' prior art discloses the method for making magnetrons (see figure 4), wherein an end surface of said thin end section formed as a projection (as taught by Opprecht et al) is formed lower than an upper surface of said metal container (54).

Regarding claim 11, the applicants' prior art discloses a method for making magnetrons (see figure 4) including, said magnetrons comprising: an anode cylinder (55); a plurality of vanes (52) arranged radially within said anode cylinder (51); a magnetic piece (53) disposed at an open end section of said anode cylinder (51); an anode vacuum container (55) including a metal container (54) disposed to cover an upper surface of said magnetic piece (53); a cathode (57) disposed along a central axis of said vacuum container (55); and an antenna (58) externally discharging microwaves (see page 1 lines 11-16); said method having steps comprising: placing said magnetic piece (53) and said metal container (54), in that order, on a shelf (see figure 5a) formed

inwardly on a thin end section projecting from said open end section of said anode cylinder (see figure 5a); and tightly welding said thin end section with said metal container (see figure 5b); but the applicants' prior art lacks the step of forming a substantially ring-shaped projection, projecting inwardly from said thin end section of said anode cylinder, whereby said metal container is loosely secured; and tightly welding said thin end section with said metal container. Opprecht et al teach a method of joining two metals comprising the step forming a substantially ring shaped projection (11,12 or 18,19) projecting inwardly from a section of a first metal material (see figure 3 and 4) and tightly welded to a second metal material (see figure 3 and 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide to the applicants' prior art method of fabricating an magnetron with a step of forming a projections projecting inwardly from said thin end section of said anode cylinder, and tightly welding said thin end section with said metal container as taught by Opprecht et al to obtain a high quality connection between the cylinder and the metal container.

Regarding claim 12, the applicants' prior art discloses the method for making magnetrons (see figure 4), wherein an outer perimeter of said metal container (54) is bent inward to form an outer perimeter bend (see figure 5a), covering a substantial section of end portions of said magnetic piece (53 and see figure 5a).

Regarding claim 13, the modified applicants' prior art discloses the method for making magnetrons (see figure 4), wherein said ring shaped projection i(as taught by Opprecht et al) is formed after said metal piece and said metal container (54) have been

installed by using a projection tool (as taught by Opprecht et al, see figure 3 and 4) disposed outside said thin end section of said anode cylinder.

Regarding claim 15, the modified applicants' prior art discloses the method for making magnetrons (see figure 4), wherein an end surface of said thin end section formed as a projection (as taught by Opprecht et al) is formed lower than an upper surface of said metal container (54).

Regarding claim 16, the modified applicants' prior art discloses the method for making magnetrons (see figure 4), wherein an end surface of said thin end section formed as a projection (as taught by Opprecht et al) is formed lower than an upper surface of said metal container (54).

Allowable Subject Matter

6. Claims 4-6, 8-10, 14 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: The primary reasons for the indication of the allowability of claims 4-6, 8-10, 14 and 17 are:

Regarding claims 4 and 9 is the inclusion therein in combination as currently claimed of the limitation of a method of making magnetrons wherein said predetermined number of projections are formed before said metal container is installed; and loosely securing said metal container by pushing said outer perimeter bend of said metal container into said predetermined number of projections.

Regarding claims 5 and 10 is the inclusion therein in combination as currently claimed of the limitation of a method of making magnetrons wherein said predetermined number of projections are inserted into a predetermined number of holes disposed on said outer perimeter bend of said metal container.

Regarding claims 6 and 8 is the inclusion therein in combination as currently claimed of the limitation of a method of making magnetrons wherein said predetermined number of projections are inserted into a predetermined number of holes disposed on said outer perimeter bend of said metal container.

Regarding claims 14 and 17 is the inclusion therein in combination as currently claimed of the limitation of a method of making magnetrons wherein said predetermined number of projections are formed before said metal container is installed; and loosely securing said metal container by pushing said outer perimeter bend of said metal container into said predetermined number of projections.

These limitations were found in claims 4-6, 8-10, 14 and 17, and are neither disclosed nor taught by the prior art of record, alone or in combination.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Koga et al (US 4,650,951), Kikuchi et al (US 5,073,693), Gartner et al (US 5,168,142), Sakamoto (US 3,610,870), Okabe et al (US 6,037,559) disclose a method of welding two metals together using a projection welding method. Murao et al (JP 2002-197984) discloses a method of producing a magnetron.


8. Any inquiry concerning this communication should be directed to Angel R. Estrada at telephone number (703) 305-0853. The Examiner can normally be reached on Monday-Friday (8:30 -5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-3682. The fax numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for after final communication.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

AE

June 12, 2003


DEAN A. REICHARD
SUPERVISORY PATENT EXAMINER
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